

**NITROGEN FERTILIZATION OF ULTRA-NARROW
ROW COTTON IN TENNESSEE**

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Abstract

Nitrogen management has been a major research objective of cotton (*Gossypium hirsutum L.*) production for many years. With the increased interest in ultra-narrow row (UNR) production, N management information has been a primary need. Research was initiated in 1999 and continued in 2000 on Loring silt loam (fine-silty, mixed, active, thermic, Oxyaquic Fragiudalfs) at the Milan Experiment Station. Paymaster 1220GB/RR was planted in 1999 and Paymaster1218BG /RR was planted in 2000. These varieties were planted 11 May both years using a John Deere 750 drill (7.5 in rows). The experimental design was a randomized block with treatments replicated 11 times. Broadcast N rates applied in 1999 were 0, 30, 60, 90, and 120 lb N/acre with a 150 lb N rate included in 2000. The N source was ammonium nitrate (AN) which was hand applied two days after planting. Individual plots were 12 by 30 feet. Normal production practices were followed in all aspects of the study. Plots were harvested using a John Deere 7450 mounted with a Cencorp 10 foot finger type header. Seed cotton sub-samples from each replicate of each treatment were combined and ginning on a 20-saw gin with dual lint cleaners. Lint yields were calculated by multiplying the lint fraction by seed cotton weights.

Lint yields of UNR were increased with broadcast N rates up to 90 lb N/acre both years. In 1999, yields ranged from 805 lb lint/acre (0 N rate) to 1183 lb lint/acre (90 lb N rate). In 2000, yields ranged from 730 lb lint/acre (0 N rate) to 1113 lb lint/acre (90 lb N rate). Averaged over the two years, yields ranged from 767 lb lint/acre (0 N rate) to 1148 lb lint/acre (90 lb N rate). Regressed yield equation for the two years was $Y=765.865+(6.557*N)-(0.02772*N^2)$ with a 0.72 R². The 90 lb N rate is higher than is currently recommended by the University of Tennessee Soil Testing Laboratory (80 lb N/acre) for conventional-row cotton production.